

## **ENVIRONMENTAL**

### **Issues**

To be successful in the global economy, a nation must develop and maintain an integrated transportation system that is competitive, efficient, safe, and environmentally sound. One of the critical challenges confronting the U.S. port industry is meeting the growing demands and diverse needs of waterborne transportation while protecting the environmentally sensitive harbor areas in which ports operate. Protecting the environment and providing an efficient and cost-effective transportation system are critical to the economic future of the United States. Environmental concerns are an integral part of a port's daily operations and its planning process. Environmental protection is a particular concern for dredging and new terminal development, where controversies over dredged material disposal, environmental impacts, and impact mitigation have resulted in delays.

Among the principal environmental concerns affecting the port industry are: (1) dredging navigation channels and managing the disposal or beneficial use of dredged material in a timely, cost-effective, and environmentally sound manner; (2) managing the wastes generated by facilities and ships in a safe and environmentally sound manner; (3) providing prompt and

adequate response to spills of oil and hazardous substances; (4) controlling air polluting emissions from vessels and port operations; (5) preventing water pollution; (6) providing for the safe handling of hazardous cargo; (7) redeveloping old industrial properties that may be contaminated; (8) complying with wetland and endangered species regulations; and (9) dealing with the various legal, liability, and financial obligations associated with environmental regulations.

### **Recent Regulatory Activities**

Ports must comply with environmental laws and regulations from all levels of government--Federal, state, and local. Major Federal laws affecting the port industry include:

Act to Prevent Pollution from Ships (APPA) (33 USC 1901-1911)  
Asbestos Hazard Emergency Response Act (15 USC 2641-2656)  
Clean Air Act (CAA) (42 USC 2071-2297)  
Clean Water Act (CWA) (33 USC 1251-1387)  
Coastal Zone Management Act (CZMA) (16 USC 1451-1465)  
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (including the Superfund Amendments and Reauthorization Act of 1986) (42 USC 9601-9675)  
Emergency Planning and Community-Right-To-Know Act (EPCRA) (42 USC 11001-11050)  
Endangered Species Act (ESA) (16 USC 1531-1543)  
Federal Insecticide, Fungicide and Rodenticide Act (7 USC 1362-1364)  
Fish and Wildlife Coordination Act (FWCA) (16 USC 661-666c)  
Marine Protection Research and Sanctuaries Act (MPRSA) (33 USC 1402-1445)  
Medical Waste Tracking Act (42 USC 6903)  
National Environmental Policy Act (NEPA) (42 USC 4321-4370d)  
Nonindigenous Aquatic Nuisance Prevention and Control Act (16 USC 4701-4751)  
Occupational Safety and Health Act of 1970 (OSHA) (29 USC 651-678)  
Oil Pollution Act of 1990 (OPA) (42 USC 2701-2761)  
Pollution Prevention Act of 1990 (42 USC 13101-13109)  
Ports and Waterways Safety Act (PWSA) (33 USC 1221-1232)  
Resource Conservation and Recovery Act (RCRA) (42 USC 6901-6992k)  
Rivers and Harbors Act (RHA) (33 USC 407-426p)  
Toxic Substances Control Act (15 USC 2601-2629)  
Water Resources Development Acts (WRDAs) (Biennial)

Among recent Federal rulemakings, published in the Federal Register (FR), of particular interest to ports and shipping are:

- o On January 12, 1996 (61 FR 1051), and February 29, 1996 (61 FR 7889), the Coast Guard (USCG), U.S. Department of Transportation, issued rules adopting with some changes, as final, the interim final rules that establish regulations requiring vessel and facility response plans in order to minimize the environmental impact of spilled oil.
- o On April 12, 1996 (61 FR 16289), the U.S. Environmental Protection Agency (EPA) published a final rule concerning the control of international movements of wastes destined for recovery operations.
- o On May 23, 1996 (61 FR 25983), the USCG issued a final rule that modifies its regulations for both inspected and uninspected commercial vessels by removing or revising obsolete and unnecessary provisions and incorporating industry standards and practices.
- o On June 20, 1996 (61 FR 31667), the EPA promulgated regulations under the Clean Air Act to prevent accidental releases of regulated substances and reduce the severity of those releases that do occur.
- o On July 3, 1996 (61 FR 35063), the USCG issued a final rule that requires that towing vessels carry and properly use navigation safety equipment.
- o On July 18, 1996 (61 FR 37648), the USCG issued an interim final rule for the security of passenger vessels and passenger terminals.
- o On September 30, 1996 (61 FR 51195), the EPA issued a final rule clarifying portions of the Agency's ocean dumping regulations regarding the number of species to be used in bioassay testing of the solid phase.
- o On March 17, 1997 (62 FR 12539), the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, issued a final rule that amends its ocean and coastal resource management regulations.
- o On May 6, 1997 (62 FR 24689), the Research and Special Programs Administration (RSPA), U.S. Department of Transportation, issued a final rule that amends the Hazardous Materials Regulations to maintain alignment with corresponding provisions of international standards.
- o On May 8, 1997 (62 FR 25115), the USCG issued final regulations that set qualifications for tankermen, and for persons in charge of, and assisting in, the handling, transfer, and transport of oil and certain hazardous liquid cargoes in bulk on board vessels.

- o On July 18, 1997 (62 FR 38651), the EPA issued final rules to revise the national ambient air quality standards for particulate matter and for ozone.
- o On July 25, 1997 (62 FR 40141), the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, issued a final rule that revises its safety and health regulations for longshoring and those parallel sections of its marine terminals standard.
- o On December 24, 1997 (62 FR 67491), the USCG published a final rule concerning implementation of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management (ISM) Code).

Ports recognize the need to deal with environmental issues in a timely fashion and have developed strategies to address potential delays and costs associated with environmental regulations. They understand the need to develop long-term plans to meet environmental concerns. Recognizing the need to identify environmental implications from the outset, the industry is proactively working with regulators and interest groups to improve the permit process, to clarify rules, and to develop consistent standards. Ports, various stakeholders, and regulatory agencies are working in a more cooperative framework in the search for solutions to complex problems that affect the Nation's environment, economic growth, and transportation services.

#### **DREDGING AND DREDGED MATERIAL DISPOSAL**

One of the primary goals of the U.S. transportation system is to facilitate the safe and secure movement of people and cargo in domestic and international waterborne commerce in order to promote the Nation's economic growth and international competitiveness in a safe and healthy environment. To accomplish this, the Nation's ports and harbors need to be maintained and improved. However, the continued development and maintenance of U.S. ports has become an increasing challenge, particularly in the area of dredging and dredged material management. The past three decades have witnessed increasing environmental awareness and mounting environmental problems affecting coastal areas and ocean waters. During the same time, increasing world trade and rapid evolution of shipping practices and technology, including containerization and intermodalism, have increased the need for port and harbor development.

Besides being the gateways for domestic and international trade, ports also play an important role in U.S. national security by handling essential cargoes for military operations. The critical role of the U.S. ports makes it essential that harbors and channels be maintained and improved. Since most of the Nation's harbors and channels are not naturally deep enough to accommodate modern vessels, dredging becomes essential. The maintenance and improvement process becomes more difficult because ports are located in or near some of the Nation's most environmentally sensitive areas such as valuable wetlands, estuaries, and associated fisheries.

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### **Dredging and Disposal of Dredged Materials**

The United States Army Corps of Engineers (Corps) is the Federal agency responsible for managing the program that directs dredging and disposal of dredged material from Congressionally-authorized navigation improvement and maintenance projects. Appendix J provides a summary of the Corps annual dredging program in terms of cost and volume of dredged material. Over the last several years, the Corps has dredged 275 million cubic yards (mcy) annually using its own and private industry dredgers at an annual cost of \$440 million. In addition, permit applicants (e.g., port authorities, terminal owners, industries, and private individuals) dredge an additional 100 mcy annually for navigation projects (i.e., ports, berths, and marinas). The Corps reviews projects and issues permits for dredging and dredged material disposal in accordance with the Rivers and Harbors Act (RHA), the Clean Water Act (CWA), and the Marine Protection Research and Sanctuaries Act (MPRSA). Under the CWA and MPRSA, the Environmental Protection Agency is responsible for developing, in cooperation with the Corps, the environmental criteria used by the Corps to evaluate proposed discharges of dredged material and for providing environmental oversight. Several other project development and environmental compliance statutes, regulations, and policies at the Federal, state, and local level also apply to typical dredging projects. When dredged sediments are disposed of in ocean, inland, or near-coastal waters, a Corps permit is required. For the dumping of dredged material in the ocean, including the territorial sea, the applicable statutory provision is Section 103 of the MPRSA. If the discharge is in waters of the United States, excluding the territorial sea, then Section 404 of the CWA is the applicable provision.

Ideally, dredging permit applicants submit complete and technically adequate project applications to the Corps and other review agencies for prompt review and decision. Dredged material testing results provide information to assess the environmental impacts of dredged material disposal at the proposed disposal site and to evaluate the risks and uncertainties associated with the proposed project. Information is then shared readily among all relevant stakeholders, from Federal and state agencies to the general public, and Congress expeditiously reviews, authorizes, and funds essential new Federal navigation projects. However, for a broad range of reasons, dredging projects can become stalled in the review process. The problems which slow down the dredging process can be categorized into the following areas: planning, the project review process, scientific uncertainties, and inconsistent funding allocations.

In some coastal ports, the main concern is the presence of contaminated sediments and the lack or shortage of disposal capacity for contaminated dredged materials. Historically, contaminated sediments accounted for about 5 percent of the annual volume of dredged material. As a result of new testing requirements, the volume of sediments classified as contaminated has increased. Uncertainties related to implementation of these revised testing protocols coupled with the shortage or lack of disposal options have contributed to delays in dredging harbors and channels.

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### **Dredging Harbors and Channels and Protecting the Environment**

Issues that complicate disposal of dredged material include: (1) inadequate planning by Federal, state, and local entities; (2) insufficient information exchange and coordination among all involved stakeholders; and (3) uncertainties regarding the scientific ability to evaluate risks to human and ecological health associated with dredged material and the disposal alternatives (e.g., open ocean disposal, confined disposal along shorelines, contained aquatic disposal, treatment processes (chemical, physical, biological, and thermal), landfills, and beneficial uses). It should be recognized, however, that timely and effective dredging and dredged material disposal are possible, while assuring protection of ecological resources and human health. The importance of navigational dredging must be acknowledged and understood, as should the environmental concerns and scientific uncertainties associated with dredging. In addition, as many ports are publicly-owned state or local entities with limited budgets to support dredging activities, economic issues must also be resolved.

The National Dredging Team (NDT) was established in 1995 to facilitate communication, coordination, and resolution of dredging issues among participating Federal agencies and to assure that dredging of U.S. harbors and channels is conducted in a timely and cost-effective manner, while ensuring environmental protection. It seeks to promote national and regional consistency on dredging issues and to provide a forum for conflict resolution and information exchange. The NDT serves as a forum for promoting implementation of the National Dredging Policy (Figure 5) and the 18 recommendations for improving the dredging process that were published in the December 1994 *Report to the Secretary of Transportation: The Dredging Process in the United States: An Action Plan for Improvement*<sup>17</sup>. The NDT is co-chaired by the EPA and the Corps, and includes the U.S. Fish and Wildlife Service, the U.S. Maritime Administration, and the U.S. National Oceanic and Atmospheric Administration (the Office of Ocean and Coastal Resource Management and the National Marine Fisheries Service). Regional Dredging Teams (RDTs) have been created around the country to provide forums for local and regional issue resolution, to foster information exchange with stakeholders, and to provide liaison with Local Planning Groups. Appendix K provides an example of how a Regional Dredging Team addresses local concerns.

Other major initiatives for achieving timely and effective dredging and dredged material management, while protecting the environment, include:

- o Dredged material management planning (DMMP) has been initiated using a consensus-based approach to develop long-term plans for environmentally sound and cost-effective management of dredged material. Stakeholders, e.g., port authorities, government officials, natural resource agencies, public interest and environmental groups, the scientific

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17

This report can be found on the internet at <http://www.epa.gov/owow/oceans/ndt/report.html>.

research community, recreational marine interests, shipping and business interests, and private citizens, are invited to work together in Local Planning Groups, co-chaired by the Corps with port authorities or states, to develop the plans. The Local Planning Groups use a watershed approach in developing their plans, since much of the contamination found in dredged sediments comes from sources of pollution located far from the affected ports and harbors. Watershed planning to reduce contamination and sediments entering waterways will reduce the need for port and harbor dredging and the amounts of contaminated sediments that are encountered when dredging is required.

- o Scientific uncertainties in evaluation of risks of dredged material disposal are being recognized and addressed. To protect human and ecological health, dredged materials are tested under a strict regime jointly developed by the EPA and the Corps to identify potential contaminants and risks. While the required tests take the complexities of sediment chemistry and toxicity and the environmental conditions specific to each disposal site into account, uncertainties in scientific evaluations will always exist. Additional efforts to reduce these uncertainties include development of additional sediment toxicity testing methods and a biological effects data base for bioaccumulative contaminants, and a comprehensive review, conducted by the EPA and Corps, of the dredged material testing requirements to ensure that they reflect sound science and sound policy. Improving the understanding of the science involved in dredged material management is important because this information assists risk managers in making practicable decisions that protect ecological resources and human health.
- o Technological advances are being pursued. Many promising and improved technologies and management techniques are emerging to improve disposal and management of contaminated dredged materials, including capping/contained aquatic disposal, the use of geotextile bags, confined disposal facilities, and treatment/decontamination processes.
- o Port and harbor management practices are being reviewed. Although port and port-related harbor activities contribute relatively little to sediment contamination (compared to upstream sources), there is a joint industry-Federal government initiative underway by the American Association of Port Authorities and the EPA to identify best management practices for ports to ensure that problems are addressed before they become pollution sources.
- o Dredged material is a resource that can be used beneficially. Beneficial use of dredged material can offer tremendous opportunities and is becoming a popular alternative to traditional disposal methods. Beneficial uses include beach nourishment; creation or restoration of marshes and wetlands; creation of islands that serve as habitat for birds, fish, shellfish, and other marine life; and fill for industrial and urban development. While usually costing more than traditional disposal methods, these beneficial uses offer many environmentally and economically beneficial ways to address the continuing need for

placement of dredged material. Key to further increasing the opportunities for beneficial use is public and private recognition and acceptance of these potential opportunities.



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**Figure 5**

**National Dredging Policy**

- o A network of ports and harbors is essential to the United States' economy, affecting its competitiveness in world trade and national security. Port facilities serve as a key link in the intermodal transportation chain and can realize their full potential as magnets for shipping and commerce only if dredging occurs in a timely and cost-effective manner.
  - o The nation's coastal, ocean, and freshwater resources are critical assets which must be protected, conserved, and restored. These resources are equally important to the United States by providing numerous economic and environmental benefits.
  - o Consistent and integrated application of existing environmental statutes can protect the environment and can allow for sustainable economic growth.
  - o Close coordination and planning at all governmental levels, and with all aspects of the private sector, are essential to developing and maintaining the nation's ports and harbors in a manner that will increase economic growth and protect, conserve, and restore coastal resources.
  - o Planning for the development and maintenance of the nation's ports and harbors should occur in the context of broad transportation and environmental planning efforts such as the National Transportation System and the ecosystem/watershed management approach.
  - o The regulatory process must be timely, efficient, and predictable, to the maximum extent possible.
  - o Advanced dredged material management planning must be conducted on a port or regional scale by a partnership that includes the Federal government, the port authorities, state and local governments, natural resource agencies, public interest groups, the maritime industry, and private citizens. To be effective, this planning must be done prior to individual Federal or non-Federal dredging project proponents seeking individual project approval.
  - o Dredged material managers must become more involved in watershed planning to emphasize the importance of point and non-point source pollution controls to reduce harbor sediment contamination.
  - o Dredged material is a resource, and environmentally-sound beneficial use of dredged material for such projects as wetlands creation, beach nourishment, and development projects must be encouraged.
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